

ORNITHOLOGICAL LITERATURE

LIFE HISTORIES OF CENTRAL AMERICAN HIGHLAND BIRDS. By Alexander F. Skutch. Publications of the Nuttall Ornithological Club, No. 7. Cambridge, Massachusetts, 1967: $6\frac{1}{4} \times 9\frac{1}{4}$ in., vi + 213 pp., 1 table, 6 figs. \$6.00 (obtainable from N.O.C., c/o Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138).

Excluding the work of Alexander Skutch, life history studies of Central American birds are seldom seen in the literature. Scientists from North America and elsewhere, whose time in the field generally is limited to a season or two, are reluctant to study a particular bird whose nest, breeding season, and habitat may be uncertain or even unknown. The possibility of wasting much valuable time in a fruitless search is too great. For this and other reasons, past work in the tropics has consisted largely of general collecting or ecological studies of a particular community where the objectives of the study could be broad and adjustable, and nearly any information obtained could be a meaningful contribution. This has been especially true of graduate students whose degree plans and financial limitations might allow for only one or two visits to the tropics.

Alexander Skutch, however, by establishing permanent residence at a farm near San Isidro del General in Costa Rica, has been able to accumulate data on tropical birds in one area for over a quarter of a century. He has studied also for considerable periods in other parts of Costa Rica and in other Latin American countries. While one season may bring him little or no useful information on many birds of the area, in his accumulated notes the general pattern of breeding and behavior of more and more species is becoming clear. In the "Life Histories of Central American Birds," volumes I and II (Pacific Coast Avifauna, Cooper Ornithological Society, Nos. 31 and 34), plus numerous shorter papers, Skutch has put together life history reports on many tropical species. The present work is the continued fruition of these years of study.

Thirty-nine species are included in this book, all characteristic of the highlands at elevations above 1,300 m (4,000 ft). As Skutch indicates, rather complete biographies are given of some birds, while others that are less well studied are included because of some interesting aspect of their life cycle. Notable here is the vivid description of the singing of the Brown-backed Solitaire (*Myadestes obscurus*). In the introduction Skutch describes in detail the nine localities at which most of his highland work was done. Six of these are in Costa Rica, two in Guatemala, and one in Ecuador. He spent about a year on the Sierra de Tecpam in Guatemala and at Montaña Azul in Costa Rica, and three to six months at several of the other localities. In writing of these areas Skutch takes space to describe the climate, vegetation, birds, and his own work there in very readable terms. His lucid prose gives a real sample of the flavor and excitement of highland birding.

Also included in the introduction is a section on altitudinal and local migrations, a subject which has not been worked out carefully for most tropical species. Some birds that Skutch studied apparently move to a lower elevation after breeding, some to a higher elevation. In the last part of the introduction an excellent discussion is given on altitudinal distribution. In describing the Tropical Zone, Subtropical Zone, Temperate Zone, and Paramo as they occur in Costa Rica, Skutch emphasizes the great amount of overlapping that can occur between these areas and thus the difficulty of defining their limits clearly. He also points out that in southern Central America, not unexpectedly, increasing elevation usually goes along with a decrease in the number of species and,

possibly, a decrease in the abundance of each species as well. The reduced number of birds in colder areas may be due to slower growth and lower reproductive rates of the organisms in the lower part of the food chain, the plants and poikilothermic animals upon which birds feed.

The life histories included in this volume cover five hummingbirds, six tyrant flycatchers, four thrushes, six wood warblers, seven fringillids, and eleven other birds of nine families. A good job has been done of ferreting out the work of others who may have studied any of these species from Mexico to South America. One of the more complete studies is on the Green Violet-ear (*Colibri thalassinus*). It emphasizes the singing of the male; the timing of the nesting season, which extends in one area or another from July to March; and the rearing of the young. After observing at length the tireless singing and intermittent feeding of a male, Skutch concludes that the bird is "a highly efficient machine for turning nectar into squeaks."

Many interesting details are brought out in the accounts, including: the way in which the male and female Blue-throated Toucanet (*Aulacorhynchus caeruleogularis*) share incubation; the nest structure of the Spotted Barbtail (*Premnoplex brunnescens*); the courtship display of the White-ruffed Manakin (*Corapipo leucorrhoa*), and comparisons with the display of other Central and South American manakins; the pugnacity of a Mountain Elaenia (*Elaenia frantzii*); the mellow song of the Rufous-browed Pepper-shrike (*Cyclarhis gujanensis*); the nest building of the Flame-throated Warbler (*Vermivora gutturalis*); the feeding of the Common Bush-Tanager (*Chlorospingus ophthalmicus*) on the nectar of the *Salvia* blossoms despite their deep corolla tubes; the unique song of the Large-footed Finch (*Pezopetes capitalis*); and the hitch-hiking of some Rufous-collared Sparrows (*Zonotrichia capensis*) that showed up at sea level in Puerto Limón, Costa Rica.

Notable throughout the book is the vast botanical knowledge Skutch, a botanist by training, brings to his discussions. Plants are seldom mentioned without being identified to family or beyond. Accounts of hummingbird feeding are made more meaningful by the naming and description of such plants as *Salvia nervata*, with its long, furry, crimson corolla tubes, and the large scarlet passion flowers (*Passiflora vitifolia*), in which only the longer billed hummingbirds can reach the floral nectaries.

Though there is much valuable information in every account, few are so complete as to discourage additional work. Detailed studies on behavior, territoriality, social relations, the nesting cycle, and other topics are still needed for most of these species. However, even the briefest of the Skutch accounts is a useful starting point for any detailed study and, most importantly, can often answer the questions of when, where, and how to look for the bird and its nest. For most readers, who will not be planning an immediate trip to the tropics or additional work on any of these species, this book offers a chance to share some rewarding experiences with one of Central America's great naturalists.—HUGH C. LAND.

THE WILD TURKEY AND ITS MANAGEMENT. By Oliver H. Hewitt, Editor. The Wildlife Society, Washington, D.C., 1967: 9 × 6 in., xiv + 589 pp., 3 col. pls., 2 fold-out maps. \$6.00.

This is a large book (589 pages), but of high quality, both in make-up and content. The 18 individual chapters are authored by specialists in the various aspects of the history and life history of the Wild Turkey. Chapter 1, on historical background, is brief, but adequate. A more thorough coverage can be found in "The Wild Turkey: Its History and Domestication" by A. W. Schorger (University of Oklahoma Press, 1966). There